BRUHAT BANGALORE MAHANAGARA PALIKE

Name Of Work	**Improvements to Roads, Drains and Footpath and Asphalting including milling whole surface of selected Arterial, Sub Arterial and other important road in Byatarayanapura Assembly constituency (Package no.YNK-5) of RI-Yelahanka Divison**
1	Improvements to drain and asphalting to Kogilu-Sampigehalli main road from Sampigehalli Village to Srirampura Railway under Bridge including Venkashwaranagara and PKS school connecting roads.
2	Improvements to drain and asphalting to Amruthahalli Main road from Bellary main road (KIA Road) @ Byatarayanapura Signal to JNRC Circle via Sobha Wind Fall Appartement including Amruthahalli village inside road from water tank circle to Rachenahalli lake.
3	Improvements to drain and asphalting to Singapura Road from Kuvempu Nagar to Gangamma circle including Shriram sameeksha apratment road(Gangamma gudi Police station road) from Kuvempunagara to Abbigere road.
4	Improvements to drain and asphalting to Amruthanagar Main Road from Dasarahalli main road to Amruthahalli water tank circle.
5	Improvements to drain and Asphalting to Link road from 8th main road (Post office road) to Vidyaranyapura Main road at Sri Dwaraka convention Hall via IECHS and Gurudarshana layout.
6	Improvements to drain and asphalting to Philomena Hospital road from Nagavara main road to Outer ring road including Nagavara main road from ORR at Nagavara Junction to Sri venugopal swamy temple road.
7	Improvements to drain and asphalting to Amco layout 60 feet main road from Bhadrappa layout main road at Muthurayaswamy temple to Military farm compound at Ganesha Temple.
8	Improvements to drain and Asphalting to Main and cross roads of Phase -2, Block 01, Rajiv gandhi nagara.
9	Improvements to drain and asphalting to link road from Mariyannanpalya main road to Dasaralli main road via Coffee board layout park in Byatarayanapura AssemblyConstituency

Estimate Cost:2120.00Lakhs

Bill of Quantities

Item No.	Description of Item	Unit	BOQ
	Part-A Civil Works		
1	Removing and refixing of Drain cover Slabs (B.S slab and RCC Slab) and poiting in CM (1:3) as directed by the Engineer incharge of the work.(Excluding GST and Area Loading Charges)	Sqm	18435.44
2	Removing and resetting of precast kerb stones fixed with CM 1:3 fixed and finished in line as per direction of Engineer incharge. (The cost of PCC shall be paid extra)(V-3.No 10.17,Page No-95 of PWD SR 2023-24)	m	13207.75
3	Earth work excavation by manual means for drains,canals and similar works in all kinds of soils , as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, removal of stumps and other deleterious matter, excavated surface leveled and sides neatly dressed disposing off the excavated stuff or sorting & stacking the selected stuff for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools & other appurtenaces required to complete the work In all kinds of soils Depth upto 1.5 m...(V-I.No 1.4.1,Page No-6 of PWD SR 2023-24)	Cum	11286.54
4	Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherevernecessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead Cement Concrete Grade M-15 & M-20(V-3.No 2.7 b,Page No-10 of PWD SR 2023-24)	cum	95.13
5	Earth work excavation for Foundation by mechanical means for all works & depth upto 3 m, as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, including dressing of excavated surfaces, disposing off or levelling the excavated earth or sorting & stacking the selected earth for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools, usage of machinery & other appurtenaces required to complete the work aggregates. In all kinds of soils Depth upto 3 m. (V-I, P.No-8, I No-1.14 of PWD SR 23-24)	Cum	3517.95
6	Providing and laying in position Cement Concrete for levelling course for all works in foundation. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed, laid in layers not exceeding 150 mm thickness, well compacted using plate vibrators,including all lead & lifts, cost of all materials of quality, labour, Usage charges of machinery, curing, and all the other appurtenances required to complete the work as per technical specifications. Mix 1:3:6 Using 40 mm nominal size graded crushed coarse aggregates(V-I, No-2.1.3, P.No-15 of PWD SR 2023-24).	Cum	610.20

7	Providing and laying in position Cement Concrete for all Sub structures of building, Irrigation works, Substructure works of bridges, Drain works & other parallelworks from 0.50m to 3.50 m height. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers, laid in layers, well compacted using needle vibrators, providing weep holes wherever necessary, including all lead & lifts, cost of all materials of quality, confirming to the requirements of relevant IS codes, labour, Usage charges of machinery, curing and all other appurtenances required to complete the Work as per technical specifications M20 Design Mix Using 20 mm and down size graded crushed coarse aggregates (V-1,P.No.16, I.No.2.4.2of PW, P&IWTD S.R 2023-24)	Cum	1176.83
8	Providing and laying in position Cement Concrete for all Sub structures of building, Irrigation works, Substructure works of bridges, Drain works & other parallelworks from 0.50m to 3.50 m height. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers, laid in layers, well compacted using needle vibrators, providing weep holes wherever necessary, including all lead & lifts, cost of all materials of quality, confirming to the requirements of relevant IS codes, labour, Usage charges of machinery, curing and all other appurtenances required to complete the Work as per technical specifications M25 Design Mix Using 20 mm and down size graded crushed coarse aggregates (V-1,P.No.16, I.No.2.4.3 of PW, P&IWTD S.R 2023-24)	Cum	85.65
9	Supplying, fitting and placing TMT FE 550/550D Steel Reinforcement complete as per drawing and technical specification. (V-I,P.No.18, I.No.2.11(h) of PW, P&IWTD S.R 2023-24)	Tonne	86.35
10	Providing and constructing load bearing wall with Solid Concrete blocks of size 400x200x200mm having block density more than 1800kg/m3 and minimum compressive strength of 4.00 N/mm2 conforming to IS 2185 (Part - I) - 2005 and constructed with CM 1:4 as per IS 2572:2005 including cost of all materials, labour, scaffolding and curing, usage charges of machinery etc complete as per specifications. (V-II, No-6.32, P.No-17 of PWD SR 2023-24).	Sqm	200.00
11	Providing and laying in position Cement Concrete for levelling course for all works in foundation. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed, laid in layers not exceeding 150 mm thickness, well compacted using plate vibrators, including all lead & lifts, cost of all materials of quality, labour, Usage charges of machinery, curing, and all the other appurtenances required to complete the work as per technical specifications. Mix 1:3:6 (M10) Using 20 mm nominal size graded crushed coarse aggregates (V-I, No-2.1.4, P.No-15 of PWD SR 2023-24).	Cum	30.00
12	Providing and laying 100mm thick pre-cast cover slabs over Road side drains / utility ducts / Rain water harvesting pit of width not exceeding 1000 mm using M20 concrete reinforced with TMT bars Fe 550 @ 6kg/m2, slabs jointed in CM 1:3 proportion and nicely finished Including providing holes in the Cover slabs wherever necessary for easy drainage of surface water including of labour, materials, scaffolding, usage of machinery, curing, lead and lift charges etc, Complete. .. (V-2,P.No.177, I.No.17.14of PW, P&IWTD S.R 2023-24)	Sqm	9300.53
13	Providing and fixing precast reinforced cement concrete covering slabs of 15cm thick made out of M25 with OPC cement @ 340kgs/cum.with 20mm downsize graded metal coarse aggregates @0.70cum and fine aggregates & 0.74 cum with superplasticizers machine mixed including providing and removing centering, shuttering, strutting proping etc for edges of slabs with TMT steel (Fe 500) cost & reinforcement charges including pointing with CM 1:3, finishing as required with cost of all materials, labour, all lead and lift, HOM of machinery, curing including cost of reinforcement etc complete as directed by the engineer in charge of work (exclusive of GST and Area loading charges)	Sqm	60.00
14	Providing and fixing RCC Precast cover slab of 250mm thick for drain in cement concrete M20 using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per drawing and the directions of Engineer in-charge. (Data Rate)	Sqm	511.89
15	Supplying and fixing M15 grade precast cement concrete Kerb stones for Roadway, Sidewalls and gutters fixed with CM 1:3 fixed and finsihed in line as per direction of Engineer in charge. (The cost of PCC shall be paid extra) 600 x 300 x 150 mm Kerb Stone. (PW,P& IWTD SR 2023-24 Vol-3, Pg No 74 Item No.8.42.3)	m	6051.25
16	Removing & Resetting existing Heavy Duty Cobble/Interlocking stones/Pavers of thickness 60/75/80/ 100mm using Cement and 40mm thick sand bed (average thickness) and compacting with plate vibrator to achieve final desired compaction & setting of paver to its final level , including cost of materials, labour and usage charges of machinery complete as per specifications. (The cost of new paver/stones required shall be added separately) (V-III No-10.16, P No-95 of PWD SR 2023-24)	Sqm	189.44

17	Providing and laying 60mm thick factory made precast M -30 grade Cement Concrete Paver Block as per IRC SP 63:2018 & IS 15658 for Cycle Tracks & Pedestrian Footpaths of approved shape and colour, laid in required pattern and including over30mm thick compacted bed of coarse sand, filling the joints withfine sand etc. all complete as per the direction of Engineer-incharge. (WMM/WBM Base to be paid separately if necessary asper relevant technical specification). (V-III No-6.8.1, P No-51 of PWD SR 2023-24)	Sqm	47.36
18	Painting two coats after filling the surface with synthetic enamel paint in all shades on new plastered concrete surfaces (V-III No-8.10,P No-66 of PWD BCSR 2023-24)	Sqm	4721.10
19	Supplying and Installation of COMPOSITE FIBER REINFORCED POLYMER Water Gully Grating with bottom chamber of appropriate size of 450 x 450 mm and a load bearing capacity of 40MT (D400 Load Capacity) of approved bond confirming to BSEN-124:1994/IS 1726.Gully Grating should have minimum 30% of water entrance area that of clear opening of chamber.It shall give to abrasion resistant layer of decorative dark grey finish. The cover should have a beam design at the bottom with thickness in the center of a minimum of 125mm to 150mm at the center.The chamber should have one circular cut of 200mm dia.It shall alsoconfirm "Permanent set" criterian as per SEN-124:1994/IS 1726.The rate is inclusive of Earth Work of 750mmx750mmx600mm pit, which should be placed over 100mm thick bed concrete,reinforced with TMT Bars Fe 550 of not less than 15Kg and concreting using M20 Grade concrete of 150mm Thick till the depth of chamber. Product should be tested in the test lab for load capacity and permanent set with cost of all materials,transportation,laoding and unloading charges ets.,complete as per specifications and directions Engineer-Incharge of the work.	Per Set	379.00
	Part-B Road Works		
20	Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 m3 in volume and stock piling at designated locations and disposal of dismantled materials and stacking serviceable and unserviceable materials separately(Vol-III, Sl No.2.19 Page No.11 PWD SR 2023-24)	Cum	63.75
21	Earth work in surface excavation by mechanical means for lowering & leveling the ground for all works other than foundation in all kinds of soils & upto depth not exceeding 300mm as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, removal of stumps and other deleterious matter including dressing of excavated surfaces, disposing off or levelling the excavated earth or sorting & stacking the selected earth for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools, usage of machinery & other appurtenances required to complete the work. In all kinds of soils upto 300 mm depth .V-I, P.No-8, I No-1.12 PWD SR 2023-24)	Cum	3326.70
22	Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver/grader in sub-base / base course on well prepared surfaceand compacting with vibratory roller to achieve the desired density(V-III No-4.17 A,P No-26 of PWD BCSR 2023-24)	Cum	2699.35
23	Providing and applying primer coat with SS1 grade Bitumen Emulsion on prepared surface of granular base including cleaning of road surface and spraying primer at the rate of 0.70 kg/m2using mechanical means. (V-III No-5.1 A,P No-31 of PWD BCSR 2023-24)	Sqm	10746.88
24	Milling of existing Bituminous surface to a specified depth up to 40mm using Milling machine including disposal of removedmaterial (V-III No-6.7 ,P No-51 of PWD BCSR 2023-24)	Sqm	42171.77
25	Providing and applying tack coat with RS1 Bituminous Emulsion using emulsion pressure distributor at the rate of 0.20 kg/m2 onthe prepared bituminous surface cleaned with mechanical broom. (V-III No-5.3,P No-31 of PWD BCSR 2023-24)	Sqm	183212.21
26	Providing and laying Dense Graded Bituminous Macadam with 40/60 TPH capacity HMP using crushed aggregates of specifiedgrading, premixed with bituminous binder VG-30, @ 4.5 per cent by weight of total mix and filler, transporting the hot mix to work site, laying with mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTHspecification clause No. 505 complete in all respects. (V-III No-5.12 C,P No-35 of PWD BCSR 2023-24)	Cum	1649.69
27	Providing and laying Bituminous Concrete with not less than 40/60 TPH capacity HMP using crushed aggregates of specified grading, premixed with bituminous binder VG-30 @ 4.78% Bitumen and waste plastic 8% of Bitumen of mix and filler, transporting the hot mix to work site, laying with mechanicalpaver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achievethe desired compaction as per MORTH specification clause No.507 complete in all respects (V-III No-5.29 B,P No-42 of PWD BCSR 2023-24)	Cum	5575.14

28	Construction of M30 Grade un-reinforced, dowel jointed, plain cement concrete pavement over a prepared sub base with OPC @ 270 kg/m3 and GGBS@ 90 kg/m3, coarse and fine aggregate conforming to IS 383:2016, maximum size of coarse aggregate not exceeding 25 mm, mixed in a batching and mixing plant as per approved mix design transported to site, laid with a paver finisher, spread, compacted and finished in a continuousoperation including provision of contraction, expansion, construction and longitudinal joints, joint filler, separation membrane, sealant primer, joint sealant, debonding strip, dowel bar, tie rod, admixtures, curing compound, steel channels, finishing to lines and grades as per drawing. (V-III No-5.29 B,P No-42 of PWD BCSR 2023-24)	Cum	85.00
29	Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads @ 250 g/m2 area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35:2015.The finished surface to be level, uniform and free from streaks and holes. (V-III No-8.15,P No-67 of PWD BCSR 2023-24)	Sqm	5543.63
30	Supplying and Fixing of Molded Shank Raised Pavement Markers / Cat's Eye made of polycarbonate and ABS moulded body and reflective panels with micro prismatic lens capable of providing total internal reflection of the light entering the lens face and shall support a load of 16000 kg tested in accordance to ASTM D 4280 Type H and complying to Specifications of Category A of MORTH Circular No RW/NH/33023/10-97 DO III Dt 11.06. 1997. The height, width and length shall not exceed 50 mm, 100 mm and 102 +/- 2 mm and with minimum reflective area of 13 cm2 on each side and the slope to the base shall be 35 +/- 5 degree. The strength of detachment of the integrated cylindrical shanks, (of diameter not less than 19 +/- 2 mm and height not less than 30+/- 2 mm) from the body is to be a minimum value of 500 Kg. Fixing will be by drilling holes on the road for the shanks to go inside, without nails and using epoxy resin based adhesive as per manufacturer's recommendation and complete as directed by the engineer.The contractor shall submit a two year warranty for satisfactory field performance including stipulated retro-reflectance of the reflecting panel, to the Engineer. (V-III I No-8.43 ,P No-74 of PWD BCSR 2023-24)	Nos	2165.00
31	Providing and fixing of retro- reflectorised cautionary, mandatory and informatory sign as per IRC:67:2022 made of Class B Type IV retro reflective sheeting fixed over 2 mm thick aluminium sheeting vide clause 803.1, 3mm/4mm thick Aluminium composite material sheet depending on the size of the sign fixed over the back support frame of min 25 x 25 x 3mm angle mounted on a mild steel circular pipe 65 NB, 3.2 mm thickness firmly fixed to the ground by means of properly designed foundation with M25 grade cement concrete 45 cm x 45 cm x 60 cm, 60 cm below ground level as per approved drawing.The sign shall be maintained as per section 12 of IRC:67:2022 60 cm equilateral triangle (V-III I No-8.5 iv ,P No-64 of PWD BCSR 2023-24)	Nos	36.00
32	Loading and Unloading of Stone Boulder/Stone aggregates/ Sand/Kankar/Moorum. (Tipper 18 m3) (V-III Page No.5, Item No.1.1D of PWD SR 2023-24)	Cum	11350.29
33	Cost of Haulage Excluding Loading and Unloading Taking output 18 t load and lead 10 km = 180 t.km (V-III Page No.5, Item No.1.4(i)B of PWD SR 2023-24) 8*10*1.28	t.km	18131.19